

# Addison!

**Public Works, Utilities Division**



**Monitoring Plan**

## Table of Contents

### Intro

#### Raw Water Sampling, In Plant Sampling, Entry Point Sampling

- Table 1 – Entry Points
- Entry Points Map

#### Disinfectant Entering the Distribution System/Distribution System Sampling

- What are Coliform Organisms?
- Which system does this apply to?
- Map
- Table 2 – Bacteriological and Disinfection Monitoring sites
- 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> week sampling sites

#### Disinfectant Residual

- Table 3
- Dead End Main Flushing Sites

#### Disinfection Byproducts (DBP's)

- Table 4
- Links
- Stage 1, Stage 2, IDSE Sample Sites
- Letter from TCEQ
- DBP2 Sample Sites (2012)

#### Lead / Copper

- Frequency
- Location
- Method
- Compliance Calculations
- Sampling procedure for Lead and Copper
- Links
- Table 5 – Lead / Copper Sample Sites

#### Definitions

## Table of Contents

### Monitoring

#### Intro

#### Raw Water Sampling, In-Plant Sampling, Entry Point Sampling

- Table 1 - Entry Points
- Entry Points Map

#### Disinfectant Entering the Distribution System -

#### Distribution System Sampling

- What are Coliform Organisms?
- Which system does this apply to?
- Map
- Table 2 – Bacteriological and Disinfection Monitoring Sites
- 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> week sampling sites

#### Disinfectant Residual

- Table 3
- Dead End Main Flushing Sites

#### Disinfection Byproducts (DBP's)

- Table 4
- Stage 1, Stage 2, IDSE Sample Sites
- Links
- Asbestos

#### Lead / Copper

- Frequency
- Location
- Method
- Compliance Calculations
- Sampling procedure for Lead and Copper
- Links
- Table 5 – Lead / Copper Sample Sites

#### Definitions

The Town of Addison operates a public water system (PWS) that purchases water from the City of Dallas. We have a population of approximately (15,250), with 3,500 connections, and 6,500 units as of January 2009.

- **Raw Water Sampling**

The system has no raw water sources.

- **001 In-Plant Sampling**

The system does not treat water; however we only collect and test residual samples of the Disinfection process. See table 1.

- **002 Entry Point Sampling**

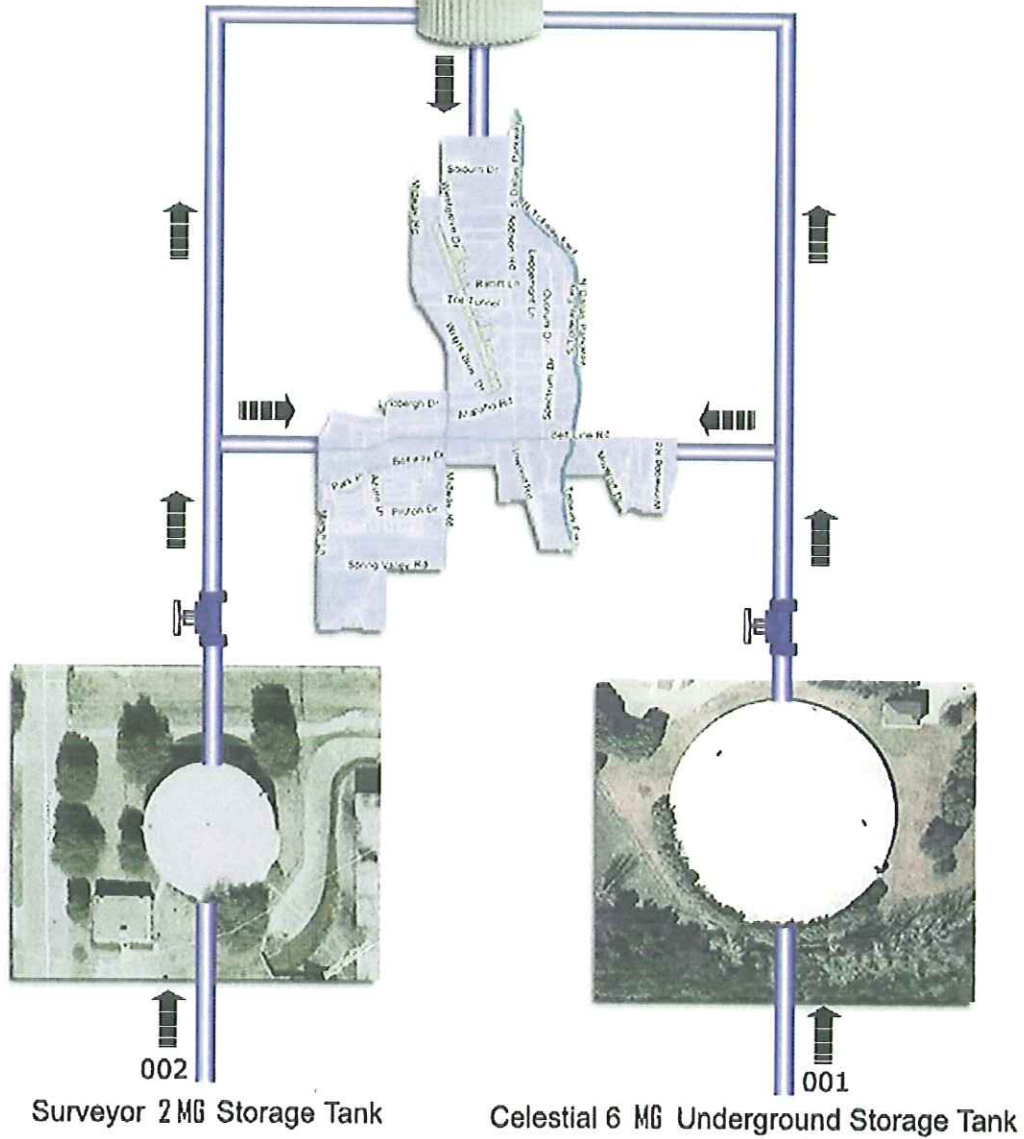
See table 1.

Table 1: Entry Points for the Town of Addison, Texas

| ENTRY POINT | SAMPLE SITE                         |
|-------------|-------------------------------------|
| 001         | Hose Bibb at Celestial Pump Station |
| 002         | Hose Bibb at Surveyor Pump Station  |

  
**ADDISON**  
WATER  
DISTRIBUTION  
SYSTEM

Elevated 1 MG  
Storage Tank



## Town Of Addison 3,500 Connections

### Disinfectant Entering the Distribution System

The City of Dallas delivers water with a *Chloramine* (Total Chlorine) residual.

a-c. Frequency, Location, and Method:

Purchased-water systems are not required to monitor disinfectant at the entry point.

- d. Compliance calculations:  
"The system is in compliance if the Chloramine residual entering the distribution system is 0.5 mg/L or greater."

### Distribution System Sampling

(The location of each collection site in our distribution system is shown in the attached map).

#### Bacteriological Samples

- a. Frequency: We collect 15 *Bacteriological* samples every month.
- b. Location: The system has 27 Bacteriological sites. Sampling is rotated through the active sites on a weekly basis. See Table 2.
- c. Method:  
Bacteriological samples are collected by Licensed Operator and delivered to:

City of Denton Lab  
1100 Mayhill Rd.  
Denton, TX. 76208  
(940) 349-7528

- d. Compliance calculations:  
Because the Town of Addison collects less than 40 samples a month, the Town is in compliance if:  
" - no repeat samples are fecal or *E. coli* positive,  
- no repeat following a fecal or *E. coli* positive routine sample is positive for total *Coliform*,  
- no more than one of the routine samples are total *Coliform* positive and none of the repeats are fecal or *E. coli* positive."

## WHAT ARE COLIFORM ORGANISMS?

Coliform organisms are bacteria commonly found in humans, animals, and the environment. Their presence in drinking water indicates that conditions in the water system may also support the existence of other microbes, including pathogens. Pathogens are microbes (germs or “bugs”) that cause disease. Pathogenic contamination is the greatest public health risk to consumers who obtain their water from a PWS. In Texas, each PWS is required to disinfect the water with chlorine to kill (inactivate) pathogens.

The different kinds of coliform organisms that are tested for include total coliform, fecal coliform, and *E. coli* (*Escherichia coli*). Results for coliform testing are reported as coliform-found (positive) or coliform not-found (negative). Coliform bacteria are surrogates, or indicator organisms, for pathogens. That is, they may not cause illness, but they indicate that conditions are suitable for the existence of other microbes that can cause illness.

### 2.1 The Meaning of a Positive Result (Coliform-Found)

Although a single positive sample is usually not a violation of TCEQ rules, a coliform-found result is always a cause for action on the part of the water system operator. The degree of the concern regarding the sample results depends on the type of coliform that is detected.

Although a total coliform-found result may be due to wind-blown soil or decayed vegetable matter that has contaminated the sample, fecal and *E. coli* results are unmistakable evidence of recent contamination of the water by animal or human feces. Although the detection of fecal coliform or *E. coli* bacteria in a single sample does not indicate that a waterborne disease outbreak is imminent, TCEQ is very concerned about such results. A coliform-found result is the early warning system that alerts you to take action to keep your customers safe.

To determine whether you have a coliform-found result, review the sample analysis form that your lab provides you. Sample results are typically reported as “Positive/Coliform-found” or “Negative/Coliform-not found.”

When coliform bacteria are present in any of your samples, the laboratory is required to contact TCEQ. You may wish to contact TCEQ also, to ensure you are performing the correct corrective actions and any additionally required sampling.

### 2.2 The Meaning of a Negative Result (Coliform-Not Found)

If your sample result is negative (coliform-not found), it indicates that no coliform organisms were detected in your water. This is good, because it shows that your distribution system is being properly disinfected.

## **WHICH SYSTEMS DOES THIS RULE APPLY TO?**

Every public water system (PWS) is required to monitor for the presence of coliform bacteria. The specific monitoring requirements for your system are based on the number of customers you serve and the type of system you operate.

Chapters 3 and 4 of this guide describe the monitoring frequency and location requirements for your system.

Monitoring for the presence of microbes, specifically for coliform bacteria, is a method to determine whether the water in the distribution system of a public water system is contaminated with bacteria from fecal matter. If fecal matter is present in drinking water, it can make consumers very sick, and may possibly kill immunocompromised individuals. Chapter 2 of this guide briefly describes the different types of coliform bacteria that are used as indicator organisms.

Because coliform bacteria are present in many places in the environment, it is important that the person collecting coliform samples use proper procedures and techniques. It is very easy to collect samples incorrectly, but it is not difficult to collect them properly. Chapter 5 of this guide provides instructions on how to correctly collect coliform samples. In addition to good sampling techniques, it is important to have the required paperwork in order when you are preparing samples for delivery to the laboratory. Chapter 6 contains information on this topic.

Occasionally, in spite of your best efforts, coliform bacteria may be detected in your system. Although this is usually not a violation, you will need to collect repeat samples (see Chapter 3). To determine whether you have a violation, refer to Chapter 9. A system that receives a violation must notify its customers of this circumstance. Chapter 10 provides the mandatory language templates used to create various public notices and also explains how to deliver these to your customers.

The Public Drinking Water Section of TCEQ hopes this guide is helpful to you. If you need additional assistance, please contact us at 512/239-4691.



WATER DISTRIBUTION SYSTEM  
WATER SYSTEM ID 0570031

SEPTEMBER 2008

| <b>Table 2: Bacteriological and Disinfection Monitoring Sites</b> |    |                                    |               |               |
|---|----|------------------------------------|---------------|---------------|
| <b>Site 1</b>   | SP | 16651 Addison Rd. , Apt. # 101     |               | Main Size 8"  |
| <b>Site 2</b>   | PR | 16420 Addison Rd.                  | <b>Active</b> | Main Size 20" |
| <b>Site 3</b>   | SB | 5510 Celestial Rd.                 | <b>Active</b> | Main Size 24" |
| <b>Site 4</b>   | SP | 14833 Inwood Rd.                   |               | Main Size 8"  |
| <b>Site 5</b>   | SP | 3820 Spring Valley Rd., Apt. # 903 |               | Main Size 8"  |
| <b>Site 6</b>   | PR | 14500 Marsh Ln.                    | <b>Active</b> | Main Size 8"  |
| <b>Site 7</b>   | PR | 4051 Rive Ln.                      | <b>Active</b> | Main Size 8"  |
| <b>Site 8</b>   | SP | 4031 Beltway Dr., Apt. # 127       |               | Main Size 8"  |
| <b>Site 9</b>   | SP | 15946 Midway Rd.                   |               | Main Size 8"  |
| <b>Site 10</b>  | PR | 4201 Kellway Cir.                  |               | Main Size 8"  |
| <b>Site 11</b>  | SB | 17130 Windward Ln.                 | <b>Active</b> | Main Size 8"  |
| <b>Site 12</b>  | SB | 15298 Spectrum Dr.                 | <b>Active</b> | Main Size 12" |
| <b>Site 13</b>  | PR | 14653 Dallas Pkwy.                 |               | Main Size 8"  |
| <b>Site 14</b>  | PR | 14210 Marsh Ln.                    | <b>Active</b> | Main Size 8"  |
| <b>Site 15</b>  | PR | 3788 Chatham Ct.                   | <b>Active</b> | Main Size 8"  |
| <b>Site 16</b>  | PR | 14677 Wayside Ct.                  | <b>Active</b> | Main Size 8"  |
| <b>Site 17</b>  | PR | 4101 Leadville Pl.                 | <b>Active</b> | Main Size 8"  |
| <b>Site 18</b>  | PR | 14946 Trafalgar Ct.                |               | Main Size 8"  |
| <b>Site 19</b>  | PR | 5100 Belt Line Rd. Suite # 602     |               | Main Size 8"  |
| <b>Site 20</b>  | PR | 4130 Billy Mitchell Dr.            | <b>Active</b> | Main Size 8"  |
| <b>Site 21</b>  | PR | 4301 Wiley Post Rd.                |               | Main Size 8"  |
| <b>Site 22</b>  | PR | 4532 Glen Curtiss Dr.              | <b>Active</b> | Main Size 8"  |
| <b>Site 23</b>  | PR | 15650 Addison Rd.                  | <b>Active</b> | Main Size 24" |
| <b>Site 24</b>  | PR | 17275 Addison Rd.                  | <b>Active</b> | Main Size 8"  |
| <b>Site 25</b>  | PR | 14131 Midway Rd.                   | <b>Active</b> | Main Size 12" |
| <b>Site 26</b>  | PR | 3910 Belt Line Rd.                 |               | Main Size 8"  |
| <b>Site 27</b>  | PR | 16835 Addison Rd.                  |               | Main Size 8"  |

(Monthly Active and Alternate Monitoring Sites)

**Town of Addison**  
**Monthly Bacteriological Analysis Sample Sites**

**Water System # 0570031**

1<sup>st</sup> Week

|           |                    |           |               |
|-----------|--------------------|-----------|---------------|
| Site # 11 | 17130 Windward Ln. |           | Main Size 8"  |
| Site # 12 | 15298 Spectrum Dr. |           | Main Size 12" |
| Site # 6  | 14500 Marsh Ln.    | Shadowood | Main Size 8"  |
| Site # 16 | 14677 Wayside Ct.  |           | Main Size 8"  |
| Site # 17 | 4101 Leadville Pl. |           | Main Size 8"  |

2<sup>nd</sup> Week

|           |                         |           |               |
|-----------|-------------------------|-----------|---------------|
| Site # 24 | 17275 Addison Rd.       | Day Care  | Main Size 8"  |
| Site # 23 | 15650 Addison Rd.       | ACC       | Main Size 24" |
| Site # 7  | 4051 Rive Ln.           |           | Main Size 8"  |
| Site # 14 | 14210 Marsh Ln.         | Pizza Hut | Main Size 8"  |
| Site # 20 | 4130 Billy Mitchell Dr. |           | Main Size 8"  |

3<sup>rd</sup> Week

|           |                       |                    |               |
|-----------|-----------------------|--------------------|---------------|
| Site # 2  | 16420 Addison Rd.     | Studio             | Main Size 20" |
| Site # 22 | 4532 Glen Curtiss Dr. |                    | Main Size 8"  |
| Site # 3  | 5510 Celestial Rd.    | Celestial P.S. GSR | Main Size 24" |
| Site # 25 | 14131 Midway Rd.      |                    | Main Size 12" |
| Site # 15 | 3788 Chatham Ct.      |                    | Main Size 8"  |

Quarterly THMs Sampling

|           |                    |  |              |
|-----------|--------------------|--|--------------|
| Site # 11 | 17130 Windward Ln. |  | Main Size 8" |
|-----------|--------------------|--|--------------|

## Disinfectant Residual—*Free or Total Chlorine*

a. Frequency:

The disinfectant residual is measured at the same time as Bacteriological samples. Also, because the system has more than 250 connections, the disinfectant residual is measured daily, at **Seven** different sampling points. See **table 3**.

b. Location:

The disinfectant residual is measured at the sample sites shown on table 3.

c. Method: The Hach Colorimeter Kit is used for all chlorine samples.

d. Compliance calculations:

“The system complies with the reporting requirements for disinfectant residual by filling out Surface / Purchase Water Monthly Operating Reports, and providing these records to the Texas Commission on Environmental Quality (TCEQ) compliance investigator upon request and by sending in the Disinfectant Level Monthly Operating Report (DLQOR) every quarter.”

also

“The system is in compliance with the minimum residual requirement if the Chloramine residual throughout the distribution system is always greater than 0.5 mg/L.”

and

“The system is in compliance with the maximum residual disinfectant level (MRDL) if the running annual average of all samples taken in the distribution system is less than 4.0 mg/L.”

| Table 3: Disinfectant Residual Sample Sites |                           |          |                             |
|---|---------------------------|----------|-----------------------------|
| Weekly                                      |                           | Daily    |                             |
| <b>Mon</b>                                  | #26 - 3910 Belt Line Rd.  | <b>1</b> | Celestial Pump Station E.P. |
| <b>Tue</b>                                  | # 2 - 16420 Addison Rd.   | <b>2</b> | Celestial Pump Station GSR  |
| <b>Wed</b>                                  | #11 - 17190 Windward Ln.  | <b>3</b> | Surveyor Pump Station E.P.  |
| <b>Thu</b>                                  | #13 - 14653 Dallas Pkway. | <b>4</b> | Surveyor Pump Station GSR   |
| <b>Fri</b>                                  | # 6 - 14500 Marsh Ln.     | <b>5</b> | Elevated Storage Tank       |
| <b>Sat</b>                                  | #23 - 15650 Addison Rd.   |          |                             |
| <b>Sun</b>                                  | #14 - 14210 Marsh Ln.     |          |                             |
|   |                           |          |                             |

### Dead End Main Flushing Sites

| SITE NO. | F.H. # | ADDRESS / BUSINESS                      | MAIN / LEAD | DISTANCE | FLOW<br>MIN./SEC. | GALLONS |
|----------|--------|---|-------------|----------|-------------------|---------|
| # 1      | 6H23   | 15200 Marsh / Aamco Transmission        | 12" / 8"    | 300'     | 0.45              | 765     |
| # 2      | 6H12   | 3760 Realty / Aetna Properties          | 12" / 8"    | 280'     | 0.40              | 700     |
| # 3      | 6H13   | 3720 Realty / Aetna Properties          | 12" / 8"    | 280'     | 0.40              | 700     |
| # 4      | 6H16   | 3805 Belt Line / Dallas 300             | 12" / 8"    | 200'     | 0.30              | 500     |
| # 5      | 9H20   | 3800 Spring Valley / Glenwood Apt.      | 8" / 6"     | 400'     | 0.35              | 600     |
| # 6      | 9H13   | 3820 Spring Valley / Spinghaven Apt.    | 8" / 8"     | 200'     | 0.40              | 700     |
| # 7      | 9H22   | 3901 Spring Valley / Loos Field         | 8" / 6"     | 800'     | 1.10              | 1,180   |
| # 8      | 9H23   | 3901 Spring Valley / Loos Field         | 8" / 6"     | 200'     | 0.15              | 300     |
| # 9      | 20H1   | 17311 Dallas Pkwy. / Park Tree North    | 16" / 10"   | 1300'    | 5.00              | 5,100   |
| # 10     | 26H10  | 15025 Inwood / Attic Storage            | 8" / 8"     | 250'     | 0.15              | 650     |
| # 11     | 27H1   | 14621 Inwood / Tuesday Morning          | 8" / 8"     | 750'     | 0.40              | 1,900   |
| # 12     | 34H19  | 5100 Belt Line / Village on the Parkway | 12" / 8"    | 480'     | 0.30              | 1,200   |
| # 13     | 34H50  | 14850 Montfort / Prestonwood Pond       | 12" / 8"    | 300'     | 0.3               | 1,000   |

## Disinfection *Byproducts* (DBPs)— *Total Trihalomethanes (TTHM)* and *Haloacetic Acids (HAA5)*.

a. Frequency:

"The TCEQ's sampling contractor collects these samples. Letters informing the system of changes in sampling schedule are attached to the back of this monitoring plan. TCEQ will schedule monitoring."

b. Location:

Because the system uses purchased surface water and serves between 500 and 10,000 people, the system must sample four times a year for the surface water. (Table 4 lists the DBP sampling site).

| Table 4. Addison Disinfection Byproduct (DBP) Sampling Site |                    |
|---|--------------------|
| Site I  | 17130 Windward Ln. |

c. Method:

"Samples are taken to a certified lab by TCEQ's sampling contractor."

d. Compliance calculations:

"The system is in compliance if the running annual average of all samples is less than the *Maximum Contaminant Level* (MCL). Total Trihalomethanes (TTHM's) MCL 80ppb. Haloacetic Acids (HAA) MCL 60ppb. The TCEQ will notify us of any violation."requirements if TCEQ does not inform the system that it is out of compliance."

[http://www.epa.gov/safewater/disinfection/stage2/pdfs/qrg\\_stage\\_2\\_dbpr\\_qrg\\_sch1\\_final.pdf](http://www.epa.gov/safewater/disinfection/stage2/pdfs/qrg_stage_2_dbpr_qrg_sch1_final.pdf)

[http://www.epa.gov/safewater/disinfection/stage2/pdfs/fs\\_sm\\_fact\\_sheet\\_final.pdf](http://www.epa.gov/safewater/disinfection/stage2/pdfs/fs_sm_fact_sheet_final.pdf)

[http://www.epa.gov/safewater/disinfection/stage2/pdfs/fs\\_sss\\_fact\\_sheet\\_final.pdf](http://www.epa.gov/safewater/disinfection/stage2/pdfs/fs_sss_fact_sheet_final.pdf)

**City of Addison  
0570031  
Dallas County, Texas**

**Stage 1 Disinfection Byproduct Rule (DBP1)**

Sample Site

|   |                |
|---|----------------|
| 1 | 17130 Windward |
|---|----------------|

**Stage 2 Disinfection Byproduct Rule (DBP2)**

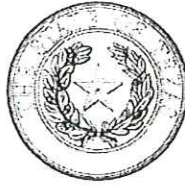
Sample Site

|   |                       |
|---|-----------------------|
| 1 | 17130 Windward.       |
| 2 | 4532 Glen Curtiss Dr. |
| 3 | 14946 Trafalgar.      |
| 4 | 14131 Midway Rd.      |

**Initial Distribution System Evaluation (IDSE)**

Sample Site

|   |                         |
|---|-------------------------|
| 1 | 5510 Celestial Rd.      |
| 2 | 15298 Spectrum Rd.      |
| 3 | 3910 Belt Line Rd.      |
| 4 | 4130 Billy Mitchell Dr. |
| 5 | 14946 Trafalgar Ct.     |
| 6 | 4532 Glen Curtiss Dr.   |
| 7 | 14131 Midway Rd.        |
| 8 | 14210 Marsh Ln.         |



## Texas Commission on Environmental Quality

*Protecting Texas by Reducing and Preventing Pollution*

March 13, 2009

JOE CHOW, MAYOR  
CITY OF ADDISON  
PO BOX 9010  
ADDISON, TX 75001-9010

**Subject:** Public Drinking Water System  
Stage 2 Disinfection Byproducts Rule (DBP2)  
**Confirmation of DBP2 Sample Sites**  
CITY OF ADDISON - PWS ID# 0570031  
DALLAS County, Texas

DEAR JOE CHOW:

Thank you for submitting your Group 1 Initial Distribution System Evaluation (IDSE) Report which identified sampling sites for the Stage 2 Disinfection Byproduct Rule (DBP2) Monitoring. These sampling sites are listed on the next page and will be monitored in 2012 when DBP2 compliance begins. We will collect a Total Trihalomethane (TTHM) and a Haloacetic Acid-Group of 5 (HAA5) sample at each sample location.

Please attach this letter and your IDSE Report to your system's Monitoring Plan and make that available for review by our regional inspectors during the Comprehensive Compliance Investigation or on request at any time.

No further action is required by you at this time. However, if your water source or your population changes between now and 2012, please contact TCEQ and inform us of the changes so we may update our records. This may impact the number of DBP2 sampling sites your system is required to have. We will also perform a review of your population and water sources in 2011 so that we have the most accurate information possible before DBP2 compliance begins. TCEQ maintains primacy over the Disinfection Byproducts Rules; therefore, you do not need to submit anything to EPA on behalf of your water system.

Please note that we will continue to monitor your system under the Stage 1 DBP rule until DBP2 compliance monitoring begins in 2012.

For more information, please contact Christine Taylor at (512) 239-2370, Jessica Huybregts at (512) 239-4709 or Jacolyn Bolding at (512) 239-4445. For assistance on this or other drinking water issues, you can always contact Public Drinking Water Section staff by email at <pdws@tceq.state.tx.us>, by telephone at (512) 239-4691 (during normal business hours), or by mail at the letterhead address (Mail Code 155).

Sincerely,

A handwritten signature in cursive script, appearing to read "Alicia Diehl".

Alicia Diehl, Ph.D.  
Drinking Water Quality Team Leader  
Public Drinking Water Section (MC-155)  
Water Supply Division

# DBP2 Sample Sites

CITY OF ADDISON, 0570031

DALLAS County, Texas

## Stage 2 DBP Sample Sites

The table below lists DBP2 samples sites beginning in 2012:

| <i>PWS ID</i> 0570031 |                             |
|-----------------------|-----------------------------|
| <i>SITE NUMBER</i>    | <i>SAMPLE LOCATION</i>      |
| 1                     | 17130 WINDWARD              |
| 2                     | 6 - 4532 GLEN CURTISS DRIVE |
| 3                     | 5 - 14946 TRAFALGAR CT      |
| 4                     | 7 - 14131 MIDWAY ROAD       |

Please attach this letter and your IDSE Report to your system's Monitoring Plan and make that available for review by our regional inspectors during the Comprehensive Compliance Investigation or on request at any time.

## Lead / Copper

- a. Frequency:  
The TCEQ will inform us when sampling must occur (every three years).  
Information stating the system's required sampling are attached to this monitoring report.
- b. Location:  
Our system is required to have 30 sample sites. See **Table 5**
- c. Method:  
Per TCEQ instruction, samples are delivered to the Texas Dept. of Health Laboratory in Austin, TX.
- d. Compliance Calculations:  
"A system is in compliance with the Lead / Copper requirements if TCEQ does not inform the system that it is out of compliance.

[http://www.epa.gov/safewater/lcmr/pdfs/qrg\\_lcmr\\_2004.pdf](http://www.epa.gov/safewater/lcmr/pdfs/qrg_lcmr_2004.pdf)

[http://www.epa.gov/safewater/schools/pdfs/lead/qrg\\_lcr\\_schools.pdf](http://www.epa.gov/safewater/schools/pdfs/lead/qrg_lcr_schools.pdf)

**Table 5: Lead/Copper Sample Sites**

|    |                  |
|----|------------------|
| 1  | 3919 Bobbin      |
| 2  | 4010 Bobbin      |
| 3  | 4012 Dome        |
| 4  | 4021 Dome        |
| 5  | 14824 LeGrande   |
| 6  | 14703 LeGrande   |
| 7  | 4109 Leadville   |
| 8  | 14805 LeGrande   |
| 9  | 4015 Morman      |
| 10 | 14683 Plage      |
| 11 | 14928 Oaks North |
| 12 | 3911 Winterpark  |
| 13 | 14820 LeGrande   |
| 14 | 4015 Rive        |
| 15 | 3911 Dome        |
| 16 | 4046 Rive        |
| 17 | 4114 Rush        |
| 18 | 17085 Vinland    |
| 19 | 15130 Surveyor   |
| 20 | 16801 Westgrove  |
| 21 | 5656 Celestial   |
| 22 | 14936 Oaks North |
| 23 | 14761 Bedivere   |
| 24 | 14925 Oaks North |
| 25 | 14852 Oaks North |
| 26 | 4100 Pokolodi    |
| 27 | 3921 Winterpark  |
| 28 | 14810 Lochinvar  |
| 29 | 14713 Sherlock   |
| 30 | 4014 Morman      |

## Definitions

When chlorine is added to water, some of it reacts first with organic materials and metals in the water, then that portion of the chlorine is not available for disinfection (this is called the **chlorine demand** of the water). The remaining chlorine concentration after the chlorine demand is met is called **total chlorine**.

**Total chlorine** is further divided into:

- 1) **Combined chlorine** the amount of chlorine that has reacted with nitrates and is unavailable for disinfection, and
- 2) **Free chlorine**, which is the chlorine available to inactivate disease-causing organisms, and thus a measure to determine the potability of water.  
([http://www.cdc.gov/safewater/publications\\_pages/chlorineresidual.pdf#search='What%20is%20chlorine%20residual%3F'](http://www.cdc.gov/safewater/publications_pages/chlorineresidual.pdf#search='What%20is%20chlorine%20residual%3F'))

**Chloramine** "is a disinfectant added to water for public health protection. It is a combination of chlorine and ammonia that is currently considered best technology for controlling the formation of certain regulated organic disinfection byproducts.

Chloraminated water is safe for people and animals to drink, and for all other general uses. However, as with chlorine, Chloramine will need to be removed for fish and amphibian use, and for people or businesses requiring highly treated water." ([http://sfwater.org/main.cfm/MC\\_ID/10/MSD\\_ID/51/MTO\\_ID/76](http://sfwater.org/main.cfm/MC_ID/10/MSD_ID/51/MTO_ID/76))

## **Coliform bacteria**

"Under the Federal *Safe Drinking Water Act* (SDWA), drinking water is tested for more than 80 different contaminants. One of the most important tests done is the analysis for **total Coliform bacteria**. All public water supply systems in the country are required to sample (**Bacteriological Sample**) the water they provide and to test frequently for Coliform bacteria."  
(<http://www.vdh.state.va.us/dw/files/bacti%20sampling%20.pdf#search='explain%20bacteriological%20samples'>)

## **E. coli**

"*Escherichia coli* (also called *E. coli*) is a bacterium that can cause serious infections. Most of the hundreds of types, or strains, of *E. coli* live harmlessly in the **digestive tracts** of humans and animals. But some strains produce a powerful toxin that causes bloody diarrhea and occasionally can cause severe blood problems and kidney failure. The most common of these strains is *E. coli* O157:H7. (The letters and numbers specify one strain of *E. coli*.)"  
(<http://www.webmd.com/hw/infection/hwl33797.asp>)

## **Maximum Contaminant Level**

"The Maximum Contaminant Level (MCL) is the maximum concentration of a chemical that is allowed in public drinking water systems. The MCL is established by the U.S. Environmental Protection Agency (EPA). Currently there are fewer than 100 chemicals for which an MCL has been established; however, these represent chemicals that are thought to pose the most serious risk." (<http://extoxnet.orst.edu/faqs/safedrink/mcl.htm>)

## *Definitions Cont...*

**Disinfection byproducts** are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established have been identified in drinking water, including trihalomethanes, and haloacetic acids.

**Trihalomethanes (THM)** are a group of four chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The trihalomethanes are chloroform, bromodichloromethane, dibromochloromethane, and bromoform. EPA has published the Stage 1 Disinfectants/Disinfection Byproducts Rule to regulate total trihalomethanes (TTHM) at a maximum allowable annual average level of 80 parts per billion. ([http://www.epa.gov/enviro/html/icr/gloss\\_dbp.html](http://www.epa.gov/enviro/html/icr/gloss_dbp.html))

"Some people who drinking water containing trihalomethanes in excess of the MCL over many years, may experience problems with their liver, kidneys, or central nervous system, and may have an increase risk of getting cancer."  
(Township of Freehold, 2004 Water Quality Report)

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**Haloacetic Acids (HAA5)** are a group of chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The regulated haloacetic acids, known as HAA5, are: monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. EPA has published the Stage 1 Disinfectants/Disinfection Byproducts Rule to regulate HAA5 at 60 parts per billion annual average. (Carcinogenic) ([http://www.epa.gov/enviro/html/icr/gloss\\_dbp.html](http://www.epa.gov/enviro/html/icr/gloss_dbp.html))